

Final Report

Police Officer and Firefighter Health Study

Executive Summary

The Police Officer and Firefighter Health Study was awarded in November 2006 to the University of Utah's Rocky Mountain Center for Occupational and Environmental Health and begun in December 2006 after funding through the Labor Commission provided through House Bill 009 (2006 Utah G.S.). This project required two primary products: 1) a comprehensive review of the prior epidemiological literature on cancers among these workers, and 2) conducting an epidemiological study among Utah's police officers and firefighters.

A comprehensive literature review demonstrated there is not a single, published epidemiological study of risks for cancer among police officers that has evaluated risks from methamphetamine-related tasks. In contrast, there are numerous epidemiological studies of firefighters. Those demonstrate different findings among the various studies. The most common cancers generally found to have been elevated were: colon, rectal, NHL, melanoma, and prostate.

We identified 144 municipalities or agencies for police officers in Utah. Of these, 70 (49%) of police officer agencies agreed to allow police officers to participate. There were 29 agencies for firefighters identified. Among firefighter agencies 27 of 29 (93.1%) of firefighter agencies agreed to allow firefighters to participate. From these agencies, we identified 10,429 potential police officers and 3,946 firefighters eligible to participate. Most participating municipalities agreed to provide names of officers, but not addresses thus mailings of enrollment information and study subject identification numbers were sent out from the municipalities which in turn promised to mail the enrollment information. This mechanism effectively prevented the ability to re-contact non-participants or, when needed, to obtain accurate addresses. This produced an average 15.5% among police and 19.6% among firefighters returned questionnaires due to incorrect addresses (from the municipalities). The cut-off date for participating in this study was September 30th, 2008 to allow for sufficient time to analyze the data prior to the statutory reporting deadlines.

This study enrolled 553 (5.30% of 10,429 eligible) police officers and 549 (13.91% of 3,946 eligible) firefighters. Detailed algorithms primarily relying on answers to several questions were used by the industrial hygienists to categorize workers into high, medium and low levels of exposures to methamphetamine laboratory and combustion products, respectively while blinded to health status. For purposes of worst case analyses, those who were deceased had largely absent exposure data and were included in the high risk category.

The police officers' most frequent cancers reported and confirmed by the Utah Cancer Registry were prostate, non-Hodgkin's lymphoma and rectal cancer. The overall

cancer rate was increased in the medium methamphetamine exposure group and was non-statistically significantly elevated in the high exposure group. Risks for lymphoma were elevated in the medium exposure group while also elevated, but not significantly, in the high exposure group. Risks for melanoma, non-Hodgkin's lymphoma, and colon and rectal cancers combined were not significantly elevated, but trended towards being positive.

The firefighters' most frequent cancer reported and confirmed by the Utah Cancer Registry was prostate. The overall cancer rate was increased in the medium combustion products exposure group (3.1-fold) and was non-statistically significantly elevated in the high exposure group (2.4-fold). Risk estimates were stronger among confirmed cases (8.5- and 4.2-fold respectively). Risks for individual cancers were unstable due to small numbers. Skin cancers were significantly elevated in both the high (4-fold) and medium (3.4-fold) categories.

Thus, there are some suggestions of elevated risks for lymphoma, melanoma and colon and rectal cancers among police officers conducting methamphetamine-related tasks. There also are suggestions of elevated risks for all cancers combined among firefighters. These conclusions must be viewed cautiously based on the low participation rates. Conclusive evidence could be obtained through compulsory, but secure, release of the officer's identifying information with compilation of exact cancer rates through the Utah Cancer Registry data and is discussed in the Future Directions paragraph on page 214.